## The Structured Atom Model - SAM

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The Structured Atom Model postulates that the nucleus has a precise, fixed, geometric structure based on two of the platonic solids, the tetrahedron and icosahedron. The nucleus grows predictably and its structure determines the properties of the elements which in turn defines the organization and periodicity of the periodic table of elements (PTE). The larger elements are built from clusters of 12 nucleons in the shape of an icosahedron. These clusters connect with each other in a tree-like manner and split into branches, doubling with each new set of branches.

Over 100 years of searching - For over a century, science has been in search of the structure of the atomic nucleus. In the book "Models of the Atomic Nucleus"[1], Norman D Cook provides a comprehensive overview of more than 30 atomic models each of which provides a partial understanding. However they are largely in conflict with each other and none of them adequately describes a significant portion of the observed properties of the elements.

**Key Principles** – The SAM was created by applying key principles found through observing nature – a) electron/proton duality, b) dense spherical packing, c) and the symmetry and stability of the tetrahedron and icosahedron.

Initial research was to determine what structures can be built by putting spheres together, which of these structures are stable, and how can a structure continue to grow and remain stable. But most importantly the resulting structures were compared to the PTE and only structures that mimicked properties of the elements were followed. The result is that SAM can explain many of the properties of the elements – valence, nuclear spin, neutron/proton ratio, stability of isotopes, and much more.

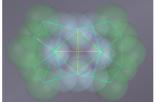
**The New Neutron** - It is well known a neutron outside of the nucleus is unstable, it decays within 15 minutes into a proton, electron and anti-neutrino. The SAM postulates that neutrons do not exist as unique fundamental particles, but instead the SAM redefines neutrons as "nuclear electrons" that are shared between protons. The protons create the structure of the nucleus and the nuclear electrons are the glue that hold the protons together.

**Explaining LENR** - More and more evidence shows that LENR reactions occur on the earth all the time in biology, meteorology, geology and more – chickens change potassium into calcium, lightning makes carbon-14 from nitrogen-14, veins of quartz, silver and gold are found within solid rock. The SAM demonstrates that many of these phenomena are the result of clusters of nucleons being broken off of or added to other atoms. For example: A carbon and oxygen fuze together to form silicon-28.

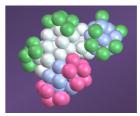
The SAM points out there are two distinct different types of nuclear fission reactions. High energy reactions create neutrons and gamma rays, whereas LENR reactions are a fusion process of clusters and do not involve the creation of new 'neutrons'. This explains why there are no gamma rays in LENR reactions but there is still an excess of heat.



Magnesium-24



Neon-22



Strontium-86